

U.S. Patent Application Serial No. 10/606,928

Amendment filed May 31, 2007

Reply to OA dated January 31, 2007

**AMENDMENTS TO THE SPECIFICATION:**

Please amend the specification as follows:

**Please amend the paragraph beginning on page 8, line 2 as follows:**

In this case, if the layer of the cobalt compound contains ~~alkaline cations~~ alkali metal ions, the conductivity of the layer of the cobalt compound is further enhanced, so that the layer of the cobalt compound is preferably a layer of a cobalt compound containing ~~alkaline cations~~ alkali metal ions. Further, it has been determined that the rate at which the cobalt compound coating the surface of the active material layer is dissolved and precipitated in the alkaline electrolytic solution is not effectively reduced if the amount of any compound, selected from the group consisting of niobium compound, titanium compound, tungsten compound, and molybdenum compound, added into the nickel cathodes together with the cathode active material, is less than 0.2% by mass in relation to the mass of the cathode active material.

**Please amend the paragraph beginning on page 12, line 3 as follows:**

On the other hand, if the amount of at least one species of a compound selected from the group consisting of niobium compound, titanium compound, tungsten compound, and molybdenum compound, to be added to the cathode disposed in the respective inner portions of the electrode group is excessively increased, the high rate discharge characteristic of the battery at room temperature deteriorates. Accordingly, the amount of at least one species of a compound selected

from the group consisting of niobium compound, titanium compound, tungsten compound, and molybdenum compound, to be added to the cathode disposed in the respective inner portions of the electrode group, should preferably correspond to the minimum required amount for maintaining a satisfactory life cycle, that is, not more than 1.0% by mass. In such a case, the conductivity of the layer of the cobalt compound would be further enhanced if it contains ~~alkaline cations~~ alkali metal ions.

**Please amend the paragraph beginning on page 15, line 4 as follows:**

Thus, nickel hydroxide particles with a coating layer of cobalt hydroxide on the surface were obtained. Thereafter, alkaline heat treatment was applied to the nickel hydroxide particles, whereby an alkaline solution was sprayed thereto in a hot air flow. During the alkaline heat treatment, temperature was adjusted such that the temperature of the nickel hydroxide particles was kept at 60°C, and 35% by mass of an alkaline solution (aqueous solution of sodium hydroxide), equivalent to 5 times as much as the parts by mass of cobalt, were sprayed. Subsequently, temperature was raised until the temperature of the nickel hydroxide particles reached 90°C. Then, the nickel hydroxide particles were washed and dried at 60°C and thereafter turned into cathode active material. In so doing, nickel hydroxide powders (the cathode active material) with a highly conductive coating of a cobalt compound containing sodium (~~alkaline cations~~ alkali metal ions), formed on the surface of the nickel hydroxide particles, were obtained.